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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,882	02/24/2004	Mitsushige Suzuki	056203.53286US	9944
23911	7590	02/13/2006		
CROWELL & MORING LLP INTELLECTUAL PROPERTY GROUP P.O. BOX 14300 WASHINGTON, DC 20044-4300				
			EXAMINER ALSOMIRI, ISAM A	
			ART UNIT 3662	PAPER NUMBER

DATE MAILED: 02/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/784,882	SUZUKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Isam Alsomiri	3662	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 November 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-17 is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

The terminal disclaimer filed on November 25, 2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of US patent No. 6,937,184 has been reviewed and is accepted. The terminal disclaimer has been recorded.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-6, 9, and 12 are rejected under 35 U.S.C. 103(a) as obvious over Kenichi JP2001127523 in view of Schmidt et al. US 6,111,551.**

Referring to claims 1, 12, Kenichi disclose in figures 1-7 a millimeter-wave radar comprising: an antenna base 9 having a transmission/reception antenna; a housing (not shown but implicit) fixing the antenna base; and at least a radome or a radar cover enclosing the antenna base; wherein the radome or the radar cover is provided with a radio wave absorbing layer 14. Kenichi is silent about the absorbing layer being formed through "insert molding" or "double molding process". However, "insert molding" or "double molding process". is well known; Schmidt teaches injection molding the housing and radar absorbent (see col. 1 lines 4-45). It would have been obvious to

modify Kenichi's system to use the injection molding method to produce the claimed radome in a single operation.

Referring to claim 2, Kenichi discloses the radio wave absorbing layer is provided to a side surface of the radome or the radar cover (see figure 7).

Referring to claim 3, Kenichi teaches the radio wave absorbing layer has its performance adjusted according to its position with respect to the transmission/reception antenna as in figure 5 or figure 6.

Referring to claims 4, 6, it's inherent and necessary that the radio wave absorbing layer has a higher dielectric Constant and loss than that of a material of the radome or the radar cover.

Referring to claim 9, Kenichi discloses in figures 7 the radio wave absorbing layer is formed of only a layer having a predetermined angle to a surface of the transmission/reception antenna or of a combination of the layer having the predetermined angle and a layer having a predetermined angle to a normal of the surface of the transmission/reception antenna.

Referring to claim 5, it's inherent the radio wave absorbing layer is a magnetic loss layer. However, even if it is not inherent, official notice is taking that having an absorbing layer that is a magnetic loss layer is well known and It would have been obvious to include for circuitry protection.

**Claims 7-8 are rejected under 35 U.S.C. 103(a) as obvious over Kenichi JP2001127523 in view of Schmidt et al. US 6,111,551 and Honma US006496138B1.**

Referring to claims 7-8, 13-14, it's inherent and necessary that the radome and the radar cover use a material with a dielectric constant such that it will permit waves through without interference, therefore, it's inherent to have that part of the radome with 3 or even less dielectric constant. Even if it is not inherent, Honma teaches a radar system where the front portion 31 (lens, which has a dielectric Constant less than 3) of the radome is made of a material that will permit wave without interference). It would have been obvious to use material with dielectric constant of 3 or less to permit wave passage. Furthermore, official notice is taken that it is well known to have the lens made of polycarbonate for the high-impact strength.

**Claims 10-11 are rejected under 35 U.S.C. 103(a) as obvious over Kenichi JP2001127523 in view of Schmidt et al. US 6,111,551 and Boyer et al. US 5,275,880.**

Referring to claim 10, Kenichi does not teach a conductor layer on the outside of the absorbing layer. Boyer teaches a radiation absorber which include a conductor layer 18 which located on the outside of the absorbing layer (see col. 1 lines 51-64). It would have been obvious to modify the Kenichi's system to include the conductor layer to reflect the microwaves which are not fully absorbed back into the absorbing layer. Boyer is silent about the conductive layer being a mesh. However, conductor layer being a mesh is well known in the art, conductor layers made of wires are known (mesh). It would have been obvious to have the conductor layer as a mesh or a wire layer to reflect the microwaves which are not fully absorbed back into the absorbing

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layer. Furthermore, It would have been obvious to use a mesh of less than  $\frac{1}{4}$  of wavelength depending on the desired resistance of the radar absorber.

Referring to claim 11, it's inherent that Kenichi teaches the absorbing layer consisting of carbon nanotube, carbon microcoil, shungite carbon, carbon black, exfoliated graphite, and carbon fiber. However, even if Kenichi doesn't teach the claimed absorbing layer consisting of carbon nanotube, carbon microcoil, shungite carbon, carbon black, exfoliated graphite, and carbon fiber, these materials are well known and are widely used to absorb radiation. Boyer teaches using graphite, carbon (see col. 2 lines 7-10). It would have been obvious to modify the combination to have the absorbing material made of graphite for its good radiation absorption.

**Claims 18-19 are rejected under 35 U.S.C. 103(a) as being obvious over Kenichi JP2001127523 in view of Schmidt et al. US 6,111,551.**

Referring to claims 18-19, Kenichi discloses in figure 7 a millimeter wave radar comprising: an antenna base 9 having a transmission-reception antenna; a housing (not shown but implicit) for fixing said antenna base; and a radome 10 covering a front side of said antenna base; wherein an electromagnetic wave absorbing layer 14 is provided on the inside surface of said radome. Kenichi is silent about injection molding a radome main body, and injection molding an electromagnetic wave absorbing layer on the inside surface of said radome main body to thereby form the radome. However, injection molding is well known; Schmidt teaches injection molding the housing and radar absorbent (see col. 1 lines 4-45). It would have been obvious to modify Kenichi's

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system to use the injection molding method to produce the claimed radome in a single operation.

***Allowable Subject Matter***

Claims 15-17 are allowed.

***Response to Arguments***

Applicant's arguments filed November 25, 2005 have been fully considered but they are not persuasive. Regarding claim 1 applicant argue "With regard to the Schmidt reference, any arrangement using a radio-wave absorbing layer is not disclosed at all; therefore, it is not possible to absorb a reflected radio-wave within the radome". However, it is clear that Schmidt teaches radio wave absorbing layers (see col. 1 lines 20-23; and col. 4). Also Schmidt is combined to teach "insert molding". Kenichi already teach the different layers. Therefore, Kenichi in view of Schmidt can use insert molding to form the radio-wave absorbing layer.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

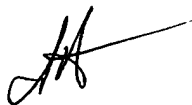
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Isam Alsomiri whose telephone number is 571-272-6970. The examiner can normally be reached on Monday-Friday 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on 571-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Isam Alsomiri

A handwritten signature in black ink, appearing to be 'Isam Alsomiri', with a long horizontal stroke extending to the right.

February 6, 2006

A handwritten signature in black ink, appearing to be 'Thomas H. Tarcza', with a stylized, cursive script.

**THOMAS H. TARCZA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600**